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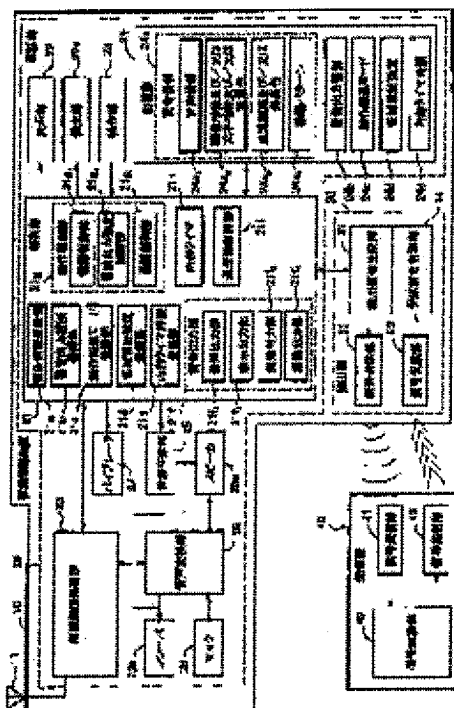
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(54) MOBILE TELEPHONE SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a mobile telephone system which degenerates operation of a mobile telephone device in the vicinity of a man having a transmitter and an apparatus in which a transmitter is set, and restrains radio communication operation.

SOLUTION: The mobile telephone device 10 is provided with a detection signal transmitting part 32 for transmitting a detection signal produced by a detection signal producing part 31, a receiving signal discriminating part 34 for discriminating a response signal from the transmitter 40 which signal is received by a signal receiving part 33, a warning output part 21f for generating warning information, and an operation degenerating part 21g for degenerating operation of the mobile telephone device 10. The transmitter 40 is provided with a signal converting part 42 for producing a response signal corresponding to a detection signal from the mobile telephone device 10 which signal is received by a signal receiving part 41, and a signal transmitting part 43 for transmitting the response signal to the mobile telephone device 10. When the mobile telephone device 10 receives the response signal from the transmitter 40, the warning information is generated by the warning output part 21f, and operation of the mobile telephone device 10 is degenerated by the operation generating part 21g, thereby restraining radio communication operation.



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CLAIMS

[Claim(s)]

[Claim 1]A reception means which is equipped with the following and in which said transmitter receives said detecting signal from said mobile phone device, Have a reply signal creating means which generates said reply signal over said detecting signal received from said mobile phone device, and a transmitting means which transmits said reply signal to said mobile phone device, and said mobile phone device by said discriminating means. A base station and a mobile phone device which performs radio which are characterized by emitting said warning information by said warning output means to an owner of the mobile phone device concerned, or the surrounding person when it distinguishes having received said reply signal from said transmitter, A cellular system which comprises this mobile phone device and a transmitter which can be communicated.

A detecting-signal creating means which generates a detecting signal for said mobile phone device to detect existence of said transmitter.

A transmitting means which transmits this detecting signal to said transmitter.

A reception means which receives a reply signal from said transmitter.

A discriminating means which distinguishes said reply signal received from said transmitter, and a warning output means which emits warning information to an owner of the mobile phone device concerned, or the surrounding person.

[Claim 2]The cellular system according to claim 1 having a voice output means to which said mobile phone device outputs speech information which has a storage parts store which memorizes beforehand said warning information which said warning output means emits, and is beforehand memorized by this storage parts store as said warning information as a warning output means.

[Claim 3]Said mobile phone device has a storage parts store which memorizes beforehand

said warning information which said warning output means emits, Display picture information and/or text which are beforehand memorized by this storage parts store as said warning information, or And and/. Or the cellular system according to claim 1 or 2 having a displaying means which makes a color of an indicator change into a background color beforehand memorized by this storage parts store as said warning information as a warning output means.

[Claim 4] Said mobile phone device has a storage parts store which memorizes beforehand said warning information which said warning output means emits, Blink light with a blinking period beforehand memorized by this storage parts store as said warning information, or And and/. Or the cellular system according to any one of claims 1 to 3 having a luminescent means which makes the luminescent color change into a color beforehand memorized by this storage parts store as said warning information as a warning output means.

[Claim 5] Said mobile phone device has a storage parts store which memorizes beforehand said warning information which said warning output means emits, And the cellular system according to any one of claims 1 to 4 having a vibration generating means which generates vibration according to a vibration pattern beforehand memorized by this storage parts store as said warning information as a warning output means.

[Claim 6] The cellular system according to any one of claims 2 to 5 with which said mobile phone device is characterized by an owner of the mobile phone device concerned having a warning information registration means by which said warning information can be registered at arbitrary stages, as said warning information which said storage parts store is made to memorize beforehand.

[Claim 7] It has the caution output classification which can specify any 1 thru/or plurality of said warning output means in which said mobile phone device emits warning information in a storage parts store made to memorize beforehand, The cellular system according to any one of claims 2 to 6 characterized by outputting said warning information to said warning output means based on this caution output classification.

[Claim 8] The cellular system according to claim 7 with which said mobile phone device is characterized by an owner of the mobile phone device concerned having a caution output classification registration means by which said caution output classification can be registered at arbitrary stages, as said caution output classification which said storage parts store is made to memorize beforehand.

[Claim 9] When said mobile phone device distinguishes having received said reply signal from said transmitter by said discriminating means, The cellular system according to any one of claims 1 to 8 having a power control means which makes a power supply of the mobile phone device concerned set it as OFF, and degenerates operation of the mobile phone device concerned as a degeneration means of operation.

[Claim 10]When said mobile phone device distinguishes having received said reply signal from said transmitter by said discriminating means, The cellular system according to any one of claims 1 to 9 having a radio wave output intensity control means to reduce radio wave output intensity for radio of the mobile phone device concerned to reduction radio field intensity set up beforehand, and to degenerate operation of the mobile phone device concerned, as a degeneration means of operation.

[Claim 11]Said mobile phone device has in a storage parts store which memorizes beforehand said reduction radio field intensity which reduces said radio wave output intensity by said radio wave output intensity control means, and as said reduction radio field intensity, The cellular system according to claim 10, wherein an owner of the mobile phone device concerned has a reduction radio-field-intensity registration means by which any value can be registered at arbitrary stages.

[Claim 12]When said mobile phone device distinguishes having received said reply signal from said transmitter by said discriminating means, The cellular system according to any one of claims 1 to 11 having a call control means to stop current supply of a circuit part which manages a talking function of the mobile phone device concerned, and to degenerate operation of the mobile phone device concerned, as a degeneration means of operation.

[Claim 13]Said mobile phone device has an internal timer which calculates the time limit set up beforehand, And when it distinguishes having received said reply signal from said transmitter by said discriminating means, said degeneration means of operation degenerates operation of the mobile phone device concerned, and. When it is detected that said time limit which makes start calculation of said internal timer and is beforehand set up by said internal timer passed, The cellular system according to any one of claims 9 to 12 with which said degeneration means of operation is characterized by making the original operating state restore said operation of the mobile phone device concerned which is degenerating.

[Claim 14]Said mobile phone device has in a storage parts store which memorizes said time limit of said internal timer beforehand, and as said time limit, The cellular system according to claim 13, wherein an owner of the mobile phone device concerned has an internal timer time limit registration means by which any value can be registered at arbitrary stages.

[Claim 15]Said mobile phone device has the degenerate mode of operation which can specify either among said degeneration means of operation to degenerate operation of the mobile phone device concerned in a storage parts store made to memorize beforehand, And the cellular system according to any one of claims 9 to 14 with which said degeneration means of operation is characterized by degenerating operation of the mobile phone device concerned based on said degenerate mode of operation when it distinguishes having received said reply signal from said transmitter by said discriminating means.

[Claim 16]The cellular system according to claim 15 with which said mobile phone device is

characterized by an owner of the mobile phone device concerned having a degenerate mode registration means of operation by which said degenerate mode of operation can be registered at arbitrary stages, as said degenerate mode of operation which said storage parts store is made to memorize beforehand.

[Claim 17] Said transmitter has the degeneration directions mode of operation in which either can be directed among said degeneration means of operation to degenerate operation of said mobile phone device, in an information storage part made to memorize beforehand, And when said detecting signal from said mobile phone device is received, said degeneration directions mode of operation memorized by said information storage part is read, While including in said reply signal and transmitting to said mobile phone device, from said transmitter, said mobile phone device receives and said reply signal by said discriminating means. When it distinguishes having received said reply signal from said transmitter, emit said warning information by said warning means to an owner of the mobile phone device concerned, or the surrounding person, and. The cellular system according to any one of claims 9 to 16 with which said degeneration means of operation is characterized by degenerating operation of the mobile phone device concerned based on said degeneration directions mode of operation contained in said reply signal.

[Claim 18] Said transmitter has the degeneration directions mode of operation in which either can be directed among said degeneration means of operation to degenerate operation of said mobile phone device, in an information storage part made to memorize beforehand, And when said detecting signal from said mobile phone device is received, after return of said reply signal automatically, Or when a read signal from said mobile phone device is received, said degeneration directions mode of operation memorized by said information storage part is read, The cellular system according to any one of claims 9 to 16 while transmitting to said mobile phone device, wherein said degeneration means of operation degenerates operation of the mobile phone device concerned based on said degeneration directions mode of operation in which said mobile phone device was received from said transmitter.

[Claim 19] When operation in which said mobile phone device performs radio to a base station is made, in advance of transmission of a radio wave signal between base stations, said detecting-signal creating means generates said detecting signal, If it is when it is distinguished that transmitted said detecting signal to said transmitter by said transmitting means, and said reply signal from said transmitter was received by said discriminating means, Emit said warning information by said warning output means, and operation of the mobile phone device concerned is degenerated by said degeneration means of operation, The cellular system according to any one of claims 1 to 18 characterized by making a radio wave signal between base stations transmit if it is on the other hand when it is distinguished that said reply signal from said transmitter is not received by said discriminating means.

[Claim 20]. [whether said reply signal creating means of said transmitter generates a signal to which a phase to said detecting signal received from said mobile phone device was changed, and] Or the cellular system according to any one of claims 1 to 19 characterized by generating said reply signal by either of whether a signal which resonated to said detecting signal is generated.

[Claim 21]The cellular system according to any one of claims 1 to 20, wherein said detecting signal transmitted and received between said mobile phone device and said transmitter and said reply signal consist of either a radio wave signal, an infrared signal, an ultrasonic signal or a sound magnetic signal.

[Claim 22]When said each of two or more mobile phone devices characterized by comprising the following transmit said detecting signal of a mutually different frequency band.

A reception means in which said transmitter can receive said two or more detecting signals of a mutually different frequency band which said each of two or more mobile phone devices transmit, respectively.

Said transmitting means which can transmit said reply signal of each frequency band generated based on said detecting signal of a received mutually different frequency band.

[Claim 23]The cellular system according to any one of claims 1 to 22, wherein it unites with medical equipment and said transmitter is constituted.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the mobile communication system which consists of a base station, the mobile phone device which performs radio, this mobile phone device, and a transmitter which can be communicated. By for example, the transmitter detection means which was good also as using a portable telephone and PHS (Personal Handy-Phone) as this mobile phone device and with which the mobile phone device was equipped. When the transmitter which exists near the mobile phone device concerned is detected, output an alarm display to the owner of the mobile phone device concerned, or the surrounding person, or. Or operation is degenerated so that specific operation of the mobile phone device concerned may be controlled, and it is related with the cellular system which makes it possible to control restricting the usable function of the mobile phone device concerned etc.

[0002]

[Description of the Prior Art]In JP,2001-160985,A "portable telephone system using GPS, and directions for use for the same", Using a GPS Satellite, a wireless base station judges the position of a portable telephone, and receives the portable telephone concerned, The art which enables the portable telephone concerned which transmitted cellular-phone use regulation information and received this cellular-phone use regulation information to control the disable of the portable telephone concerned, power control, answering machine starting, the display of a message, etc. is indicated. It **, and when it is to use portable telephones, such as a hospital and an art gallery, in the place which is not preferred, automatically, operation of the portable telephone concerned is controlled, it becomes impossible to use it, and it is supposed that trouble can be prevented from starting on the outskirts.

[0003]In JP,7-245782,A "mobile radio apparatus", When the mode switching signal sending device with which the portable telephone is installed in the wicket etc. is passed, When the

portable telephone concerned carries out call origination to said portable telephone which will be changed to pager mode, will perform intermittent reception operation, and was changed to this pager mode, When we decide to report that said portable telephone is in pager mode to a calling party and said mode switching signal sending device is passed again, Or when the change of operational mode is made with the changeover switch on the keypad provided in said portable telephone, the art of returning to a state usable as a portable telephone is indicated. It **, a telephone call is compulsorily forbidden at the place where use of mobile wireless machines, such as a portable telephone, is forbidden, and it is supposed that the situation of giving displeasure to a surrounding person can be prevented by the telephone call which uses this mobile wireless machine.

[0004]In JP,9-311989,A "portable telephone alarming device", the electrical signal of the electromagnetic waves which make electronic equipment malfunction is chosen with frequency, and the art which generates an alarm signal is indicated. **, it makes it exercise self-control to use a portable telephone and a field radio at public places, such as a hospital and an airfield, and it is supposed that malfunction of the electronic circuit with which the medical equipment of a hospital, the control machinery for air-traffic control of the airfield, etc. were equipped can be prevented.

[0005]In JP,11-331955,A "sending-and-receiving regulatory system of the portable telephone which uses a sending-and-receiving regulation radio wave signal transmitter and it", A portable telephone receives the sending-and-receiving regulation radio wave signal sent from the sending-and-receiving regulation radio wave signal transmitter which operates according to commercial power or a cigarette power supply, and the art of suspending a sending-and-receiving function automatically is indicated. It is supposed that it can **, and the traffic accident by use of the portable telephone in an automobilism can be prevented, or the trouble to others by use of the portable telephone in a public facility etc. can be prevented.

[0006]

[Problem(s) to be Solved by the Invention]However, if it is in the Prior art like the above-mentioned, Pinpoint beforehand altogether the place and the area which regulate use of mobile phone devices, such as a portable telephone, install the detection equipment for detecting a mobile phone device fixed, or, [or / in addition to the place in which the place which it is required to install the control machinery which sends out a disable signal fixed, and was pinpointed beforehand, said detection equipment, and control machinery were installed], Regulation operation [like / (that is, operation is degenerated)] which forbids use of a mobile phone device will not be able to be realized, but it will enable the owner of a mobile phone device to completely use the mobile phone device concerned freely. When it **, the owner of a mobile phone device uses the mobile phone device concerned as a use plug and a base station and radio are started, even if those who are carrying the pacemaker exist in the

neighborhood, It has the problem of causing the situation which uses the mobile phone device concerned without noticing it.

[0007]In the cellular system which comprises a transmitter which has the function for this invention to be made in view of this situation, to answer the detecting signal from a mobile phone device and this mobile phone device, and to reply a reply signal, Even if it is a case where this transmitter is being attached and fixed to specific apparatus not to mention the case where this transmitter is carried and it is in a movable state, When said transmitter in which said mobile phone device exists in the neighborhood is detected at arbitrary places, To the owner of the mobile phone device concerned, or the surrounding person, an alarm display is made to output automatically or it aims at what is made to restrict compulsorily specific operation of the mobile phone device concerned itself further (that is, operation of the mobile phone device concerned is degenerated and specific operation is forbidden).

[0008]As a specific function to restrict a function here compulsorily, For example, set the power supply of the mobile phone device concerned as OFF, and stop transmission of the radio wave signal from the mobile phone device concerned, make a lower level reduce radio wave output intensity, or. Or deterring the current supply to the circuit part needed for a telephone call, and making telephone call operation restrict etc. is mentioned, and they use to choose any degenerate mode of operation as a plug possible based on the directions from the owner and transmitter of the mobile phone device concerned.

[0009]It **, and when those who carry the transmitter which made the transmitter unite with medical equipment, such as a pacemaker, for example exist in the neighborhood, let sending out of the dangerous electric wave from said mobile phone device be a restriction plug automatically. As a transmitter, you may be a simple transmitter which consists of what is called a tag etc.

[0010]

[Means for Solving the Problem]A cellular system concerning this invention provides an arts means for solving this technical problem, and each concrete arts means consists of composition like the following. In a cellular system with which the 1st arts means comprises a base station, a mobile phone device which performs radio, this mobile phone device, and a transmitter which can be communicated, A detecting-signal creating means which generates a detecting signal for said mobile phone device to detect existence of said transmitter, A transmitting means which transmits this detecting signal to said transmitter, and a reception means which receives a reply signal from said transmitter, It has a discriminating means which distinguishes said reply signal received from said transmitter, and a warning output means which emits warning information to an owner of the mobile phone device concerned, or the surrounding person, A reception means in which said transmitter receives said detecting signal from said mobile phone device, Have a reply signal creating means which generates said reply

signal over said detecting signal received from said mobile phone device, and a transmitting means which transmits said reply signal to said mobile phone device, and said mobile phone device by said discriminating means. When it distinguishes having received said reply signal from said transmitter, it is considered as a cellular system which emits said warning information by said warning output means to an owner of the mobile phone device concerned, or the surrounding person.

[0011]In a cellular system given in said 1st arts means the 2nd arts means, Said mobile phone device uses a voice output means which outputs speech information which has a storage parts store which memorizes beforehand said warning information which said warning output means emits, and is beforehand memorized by this storage parts store as said warning information as a cellular system which it has as a warning output means.

[0012]In a cellular system given in said 1st or 2nd arts means the 3rd arts means, Said mobile phone device has a storage parts store which memorizes beforehand said warning information which said warning output means emits, Display picture information and/or text which are beforehand memorized by this storage parts store as said warning information, or And and/. Or let a displaying means which makes a color of an indicator change into a background color beforehand memorized by this storage parts store as said warning information be the cellular system which it has as a warning output means.

[0013]In a cellular system given in either said 1st [the] thru/or the 3rd arts means the 4th arts means, Said mobile phone device has a storage parts store which memorizes beforehand said warning information which said warning output means emits, Blink light with a blinking period beforehand memorized by this storage parts store as said warning information, or And and/. Or let a luminescent means which makes the luminescent color change into a color beforehand memorized by this storage parts store as said warning information be the cellular system which it has as a warning output means.

[0014]In a cellular system given in either said 1st [the] thru/or the 4th arts means the 5th arts means, Said mobile phone device has a storage parts store which memorizes beforehand said warning information which said warning output means emits, And let a vibration generating means which generates vibration according to a vibration pattern beforehand memorized by this storage parts store as said warning information be the cellular system which it has as a warning output means.

[0015]In a cellular system given in either said 2nd [the] thru/or the 5th arts means the 6th arts means, Said mobile phone device considers it as a cellular system with which an owner of the mobile phone device concerned has a warning information registration means by which said warning information can be registered at arbitrary stages, as said warning information which said storage parts store is made to memorize beforehand.

[0016]In a cellular system given in either said 2nd [the] thru/or the 6th arts means the 7th arts

means, It has the caution output classification which can specify any 1 thru/or plurality of said warning output means in which said mobile phone device emits warning information in a storage parts store made to memorize beforehand, Based on this caution output classification, it is considered as a cellular system which outputs said warning information to said warning output means.

[0017]In a cellular system given in said 7th arts means the 8th arts means, Said mobile phone device considers it as a cellular system with which an owner of the mobile phone device concerned has a caution output classification registration means by which said caution output classification can be registered at arbitrary stages, as said caution output classification which said storage parts store is made to memorize beforehand.

[0018]In a cellular system given in either said 1st [the] thru/or the 8th arts means the 9th arts means, When said mobile phone device distinguishes having received said reply signal from said transmitter by said discriminating means, Let a power control means which makes a power supply of the mobile phone device concerned set it as OFF, and degenerates operation of the mobile phone device concerned be the cellular system which it has as a degeneration means of operation.

[0019]In a cellular system given in either said 1st [the] thru/or the 9th arts means the 10th arts means, When said mobile phone device distinguishes having received said reply signal from said transmitter by said discriminating means, Let a radio wave output intensity control means to reduce radio wave output intensity for radio of the mobile phone device concerned to reduction radio field intensity set up beforehand, and to degenerate operation of the mobile phone device concerned be the cellular system which it has as a degeneration means of operation.

[0020]In a cellular system given in said 10th arts means the 11th arts means, Said mobile phone device has in a storage parts store which memorizes beforehand said reduction radio field intensity which reduces said radio wave output intensity by said radio wave output intensity control means, and as said reduction radio field intensity, It is considered as a cellular system with which an owner of the mobile phone device concerned has a reduction radio-field-intensity registration means by which any value can be registered at arbitrary stages.

[0021]In a cellular system given in either said 1st [the] thru/or the 11th arts means the 12th arts means, When said mobile phone device distinguishes having received said reply signal from said transmitter by said discriminating means, Let a call control means to stop current supply of a circuit part which manages a talking function of the mobile phone device concerned, and to degenerate operation of the mobile phone device concerned be the cellular system which it has as a degeneration means of operation.

[0022]In a cellular system given in either said 9th [the] thru/or the 12th arts means the 13th arts means, Said mobile phone device has an internal timer which calculates the time limit set

up beforehand, And when it distinguishes having received said reply signal from said transmitter by said discriminating means, said degeneration means of operation degenerates operation of the mobile phone device concerned, and. Calculation of said internal timer is made to start, and when it is detected that said time limit beforehand set up by said internal timer passed, said degeneration means of operation uses said operation of the mobile phone device concerned which is degenerating as a cellular system which the original operating state is made to restore.

[0023]In a cellular system given in said 13th arts means the 14th arts means, Said mobile phone device has in a storage parts store which memorizes said time limit of said internal timer beforehand, and as said time limit, It is considered as a cellular system with which an owner of the mobile phone device concerned has an internal timer time limit registration means by which any value can be registered at arbitrary stages.

[0024]In a cellular system given in either said 9th [the] thru/or the 14th arts means the 15th arts means, Said mobile phone device has the degenerate mode of operation which can specify either among said degeneration means of operation to degenerate operation of the mobile phone device concerned in a storage parts store made to memorize beforehand, And when it distinguishes having received said reply signal from said transmitter by said discriminating means, based on said degenerate mode of operation, said degeneration means of operation considers it as a cellular system which degenerates operation of the mobile phone device concerned.

[0025]In a cellular system given in said 15th arts means the 16th arts means, Said mobile phone device considers it as a cellular system with which an owner of the mobile phone device concerned has a degenerate mode registration means of operation by which said degenerate mode of operation can be registered at arbitrary stages, as said degenerate mode of operation which said storage parts store is made to memorize beforehand.

[0026]In a cellular system given in either said 9th [the] thru/or the 16th arts means the 17th arts means, Said transmitter has the degeneration directions mode of operation in which either can be directed among said degeneration means of operation to degenerate operation of said mobile phone device, in an information storage part made to memorize beforehand, And when said detecting signal from said mobile phone device is received, said degeneration directions mode of operation memorized by said information storage part is read, While including in said reply signal and transmitting to said mobile phone device, from said transmitter, said mobile phone device receives and said reply signal by said discriminating means. When it distinguishes having received said reply signal from said transmitter, emit said warning information by said warning means to an owner of the mobile phone device concerned, or the surrounding person, and. Based on said degeneration directions mode of operation contained in said reply signal, said degeneration means of operation considers it as a cellular system

which degenerates operation of the mobile phone device concerned.

[0027]In a cellular system given in either said 9th [the] thru/or the 16th arts means the 18th arts means, Said transmitter has the degeneration directions mode of operation in which either can be directed among said degeneration means of operation to degenerate operation of said mobile phone device, in an information storage part made to memorize beforehand, And when said detecting signal from said mobile phone device is received, after return of said reply signal automatically, Or when a read signal from said mobile phone device is received, said degeneration directions mode of operation memorized by said information storage part is read, While transmitting to said mobile phone device, based on said degeneration directions mode of operation received from said transmitter, said degeneration means of operation uses said mobile phone device as a cellular system which degenerates operation of the mobile phone device concerned.

[0028]In a cellular system given in either said 1st [the] thru/or the 18th arts means the 19th arts means, When operation in which said mobile phone device performs radio to a base station is made, in advance of transmission of a radio wave signal between base stations, said detecting-signal creating means generates said detecting signal, If it is when it is distinguished that transmitted said detecting signal to said transmitter by said transmitting means, and said reply signal from said transmitter was received by said discriminating means, Emit said warning information by said warning output means, and operation of the mobile phone device concerned is degenerated by said degeneration means of operation, If it is on the other hand when it is distinguished that said reply signal from said transmitter is not received by said discriminating means, it is considered as a cellular system to which a radio wave signal between base stations is made to transmit.

[0029]In a cellular system given in either said 1st [the] thru/or the 19th arts means the 20th arts means, . [whether said reply signal creating means of said transmitter generates a signal to which a phase to said detecting signal received from said mobile phone device was changed, and] Or it is considered as a cellular system which generates said reply signal by either of whether a signal which resonated to said detecting signal is generated.

[0030]In a cellular system given in either said 1st [the] thru/or the 20th arts means the 21st arts means, Said detecting signal transmitted and received between said mobile phone device and said transmitter and said reply signal consider it as a cellular system which consists of either a radio wave signal, an infrared signal, an ultrasonic signal or a sound magnetic signal.

[0031]In a cellular system given in either said 1st [the] thru/or the 21st arts means the 22nd arts means, In a case where said each of two or more mobile phone devices transmit said detecting signal of a mutually different frequency band, A reception means in which said transmitter can receive said two or more detecting signals of a mutually different frequency band which said each of two or more mobile phone devices transmit, respectively, It is

considered as a cellular system which has said transmitting means which can transmit said reply signal of each frequency band generated based on said detecting signal of a received mutually different frequency band.

[0032]In a cellular system given in either said 1st [the] thru/or the 22nd arts means, said transmitter uses the 23rd arts means as a cellular system which is united with medical equipment and constituted.

[0033]

[Embodiment of the Invention]An example of the embodiment of the cellular system concerning this invention is explained referring to drawings below. Drawing 1 is an approximate account figure for explaining operation of the cellular system concerning this invention, and drawing 2 is a block lineblock diagram showing an example of the composition of the transmitter used for the portable telephone system concerning this invention. Drawing 3 is a block lineblock diagram showing other examples of the composition of the transmitter used for the portable telephone system concerning this invention.

[0034]As shown in drawing 1, when starting to use the mobile phone device 1 concerned, from the mobile phone device 1, It precedes operating the mobile phone device concerned and transmitting a radio wave signal to a base station, When the detection radio wave signal 3 for detecting the transmitter 2 which those who do the whereabouts to the neighborhood possess is sent out always or periodically and this detection radio wave signal 3 is received by the transmitter 2, it is a form which answers the detection radio wave signal 3 received from the transmitter 2, The response radio wave signal 4 which shifted the phase to this detection radio wave signal 3 is sent out.

[0035]If the mobile phone device 1 receives this response radio wave signal 4, when it will distinguish the phase of the received response radio wave signal 4, it can identify that it is the response radio wave signal 4 from the transmitter 2, and can detect that the transmitter 2 exists in the neighborhood. Although the example which is using the radio wave signal is shown as the response radio wave signal 4 over the detection radio wave signal 3 and this detection radio wave signal 3 for detecting the transmitter 2 in the cellular system concerning this invention here, It may be the detecting signal and reply signal using media, such as not the thing that is limited in this case but an infrared signal and an ultrasonic signal, and a sound magnetic signal.

[0036]Next, the transmitter 2 is explained briefly. It is supposed that what is called what is called a "tag" using an electric wave method or a sound magnetic system, for example is used as the transmitter 2 used in this example. The "tag"-type transmitter does not need to have a power supply in transmitter 2 main part like the tag for destination detection etc. which the article administrative tag or wandering old person who makes an article adhere for example is made to carry, and it is small and lightweight here, and is a passive device which operates by

receiving the signal from the outside. However, the composition of the transmitter 2 is not specified as this art.

[0037]If the detection radio wave signal 3 is received in the transmission and reception section 2a as a "tag"-type transmitter from the exterior, for example as shown in drawing 2, As a phase is made to change with the phase change part 2bs constituted by the coil or the capacitor in the received detection radio wave signal 3 and it is shown in the thing of the type which transmits as the response radio wave signal 4 from the transmission and reception section 2a, or drawing 3, When the detection radio wave signal 3 is received in the transmission and reception section 2a from the exterior, the radio wave signal which resonated in frequency specific at the resonance part 2c is generated as the response radio wave signal 4, and there is a type which transmits from the transmission and reception section 2a.

[0038]Next, the composition of the cellular system concerning this invention is explained in detail using drawing 4. It is a block lineblock diagram showing an example of the composition of the cellular system which drawing 4 requires for this invention here. In drawing 4, the cellular system concerning this invention consists of the mobile phone device 10 and the transmitter 40, and the mobile phone device 10 comprises the telephone section 20 which manages operation of wireless telephone communication, and the primary detecting element 30 which detects existence of the transmitter 40.

[0039]The light-emitting part 22a which turns into the telephone section 20 from the control section 21 which controls the whole, the indicator 22 which performs presenting of a variety of information, LED which carries out the lighted indication of the variety of information, etc., The loudspeaker 25a which outputs the audible audio signal from the final controlling element 23 in which the owner of the mobile phone device 10 concerned operates it, the storage parts store 24 which carries out accumulation memory of the information, the sound-source generation part 25 which generates the sound source of an audible audio signal, and the sound-source generation part 25, Change the receiver 25b which views and listens to an audible audio signal, the microphone 26 which inputs speech information, the vibrator 27 made to generate vibration, the radio treating part 28 which performs transmitting and receiving processing of a radio wave signal via the antenna 11, and the speech information from the microphone 26, and transmit to the radio treating part 28, or, On the contrary, it has the voice conversion section 29 which changes the radio signal from the radio treating part 28, and is outputted to the loudspeaker 25a or the receiver 25b.

[0040]When the reply signal from the transmitter 40 which exists in the neighborhood is detected to the control section 21 here, The warning information 24a which shows the owner of the mobile phone device 10 concerned, and the surrounding person the display information for carrying out an alarm display, The warning information registering part 21a which the owner of the mobile phone device 10 concerned can register into the storage parts store 24 beforehand

at arbitrary stages, The caution output classification 24b which specifies the warning output means which outputs said warning information 24a, The caution output classification registering part 21b which the owner of the mobile phone device 10 concerned can register into the storage parts store 24 beforehand at arbitrary stages, When the reply signal from the transmitter 40 which exists in the neighborhood is detected, compulsorily, It has the degenerate mode registering part 21c of operation into which the owner of the mobile phone device 10 concerned can register beforehand the degenerate mode 24c of operation which shows what kind of operation of the mobile phone device 10 concerned is degenerated (that is, what kind of operation is controlled?) at the storage parts store 24 at arbitrary stages.

[0041]When the reply signal from the transmitter 40 which exists in the neighborhood is detected to the control section 21, as degenerate mode of operation which degenerates operation of the mobile phone device 10 concerned, In the case where the degeneration operation mode in which the radio wave output intensity of the radio wave signal emitted from the antenna 11 is reduced is chosen, 24 d of reduction radio field intensity which shows whether even what kind of level reduces this radio wave output intensity, The owner of the mobile phone device 10 concerned by the reduction radio-field-intensity registering part 21d which can be beforehand registered into the storage parts store 24 at arbitrary stages, and the operation degenerating part 21g mentioned later. The time limit after once degenerating operation of the mobile phone device 10 concerned, until it returns this degenerated operation to the original state, It has the internal timer time limit registering part 21e to which the owner of the mobile phone device 10 concerned can register beforehand the internal timer time limit 24e for setting it as 21 h of internal timers into the storage parts store 24 at arbitrary stages.

[0042]When the reply signal from the transmitter 40 which exists in the neighborhood is detected to the control section 21, According to the information registered into said caution output classification 24b beforehand memorized by the storage parts store 24, The caution output part 21f used as the warning output means to which said warning information 24a is made to output, When the reply signal from the transmitter 40 which exists in the neighborhood is detected, according to the information registered into said degenerate mode 24c of operation beforehand memorized by the storage parts store 24, 21 g of operation degenerating parts which degenerate operation of the mobile phone device 10 concerned reach, Control transmission and reception of the information between the below-mentioned primary detecting elements 30, and notify the generation cycle of the detecting signal in the primary detecting element 30, or, On the contrary, it has the transmitting and receiving controller 21i which outputs the cautious control signal which shows that the reply signal from the transmitter 40 was detected in the primary detecting element 30 to the caution output part 21f and/or the operation degenerating part 21g.

[0043]Voice output part 21f₁ for outputting speech information 24a₁ memorized by the caution

output part 21f as the warning information 24a at the storage parts store 24 to the loudspeaker 25a or the receiver 25b via the sound-source generation part 25, Display output part 21f₂ for carrying out the display output of the picture information, text, and/or background color 24a₂ memorized by the storage parts store 24 as the warning information 24a to the indicator 22, According to blinking period and/or luminescent color 24a₃ memorized by the storage parts store 24 as the warning information 24a, blink the light-emitting part 22a, or, According to radiant power output part 21f₃ which makes the luminescent color change, and vibration pattern 24a₄ memorized by the storage parts store 24 as the warning information 24a, it has vibration output part 21f₄ which vibrates the vibrator 27.

[0044]The aforementioned variety of information memorized by the storage parts store 24 as the warning information 24a here, Namely, as speech information 24a₁, picture information, text, and/or background color 24a₂, blinking period, and/or luminescent color 24a₃ and vibration pattern 24a₄, When the owner of the mobile phone device 10 concerned has not done register operation by the warning information registering part 21a, the warning information beforehand registered into the mobile phone device 10 concerned as a default can be used.

[0045]When the owner of the mobile phone device 10 concerned registers with the caution output classification 24b of the storage parts store 24 by the caution output classification registering part 21b, It is also possible to specify and register two or more warning output means which consist of combination only with one arbitrary warning output means, for example, it is possible to carry out an alarm display also to the indicator 22 at the same time it makes the loudspeaker 25a and the receiver 25b output warning information with a sound.

[0046]The power supply (power supplies other than the power supply which awaits and operates in the state) of the mobile phone device 10 concerned is compulsorily set to the operation degenerating part 21g at OFF, Control-power-supply 21g₁ which deters generation of the radio wave signal from the antenna 11, Radio wave output intensity control part 21g₂ which reduces even the level specified from the level or the transmitter 40 which 24 d of reduction radio field intensity of the storage parts store 24 shows the radio wave output intensity of the radio wave signal from the antenna 11, And it has call control part 21g₃ which stops the current supply to the radio treating part 28 and the voice conversion section 29 and to which telephone call operation of the mobile phone device concerned is forbidden.

[0047]Out of the signal received in the signal receive section 33 for on the other hand receiving the detecting-signal generation part 31 which generates the detecting signal transmitted to the transmitter 40 in the primary detecting element 30, the signal transmission part 32 which

transmits this generated detecting signal to the transmitter 40, and the signal from the transmitter 40, and the signal receive section 33. It has the input-signal discrimination section 34 for distinguishing the reply signal from the transmitter 40 returned according to said detecting signal.

[0048]The signal which the signal receive section 41 for receiving said detecting signal from the mobile phone device 10 and the signal receive section 41 received is changed into the transmitter 40. It has the signal transmission part 43 for transmitting the reply signal creating means 42 for generating a reply signal, i.e., a signal conversion section, and the reply signal changed and generated.

[0049]Next, operation of the cellular system shown in drawing 4 is explained. Here about general telephone call operation of the mobile phone device 10, The operation of which it warns automatically not to matter as what performs the completely same telephone call operation as the existing portable telephone etc., to omit the explanation about this telephone call operation, and not to use the mobile phone device 10, Operation of the mobile phone device 10 is degenerated compulsorily, and the operation which controls radio operation is explained.

[0050]First, in the detecting-signal generation part 31 of the primary detecting element 30, the detecting signal for detecting that the transmitter 40 exists in the neighborhood is generated. In the signal transmission part 32, this detecting signal is changed into a radio wave signal, and is sent out from the mobile phone device 10. The generation cycle and transmission period of this detecting signal can be changed and set as arbitrary intervals if needed. When operation of using the mobile phone device 10 concerned and performing radio between the mobile phone device 10 concerned and base station as mentioned above is made, Before a radio wave signal is transmitted from the antenna 11 to a base station, at the arbitrary intervals which said detecting signal is generated by the detecting-signal generation part 31, and are set up beforehand. It is transmitted from the signal transmission part 32, and when it awaits and is in a state on the other hand, this detecting signal is not generated but it is set as the state where it is not transmitted, from the signal transmission part 32.

[0051]Although the transmitter 40 is a passive device and is not usually operating as mentioned above, if said detecting signal is received from the exterior 10, i.e., a mobile phone device, in the signal receive section 41, The transmitter 40 is outputted as a reply signal from the signal transmission part 43, after being started, and transmitting said received detecting signal to the signal conversion section 42 which is a reply signal creating means, for example, performing phase conversion processing.

[0052]When said reply signal outputted from the transmitter 40 is received in the signal receive section 33 with which the primary detecting element 30 of the mobile phone device 10 is equipped, said reply signal, . It was sent to the input-signal discrimination section 34, and have

been returned to said detecting signal. Distinction of whether to be a reply signal from the transmitter 40 is made, and the notification signal which reports that the transmitter 40 exists in the cautious control signal, i.e., the neighborhood, is transmitted to the transmitting and receiving controller 21i prepared for the case where it is distinguished that it is this reply signal from the transmitter 40 at the telephone section 20.

[0053]In the transmitting and receiving controller 21i, the received cautious control signal is sent out to the caution output part 21f, The cautious control signal which made the alarm display to the user of the mobile phone device 10 concerned or the surrounding person generate automatically, and made output to the warning output means specified by the caution output classification 24b, or was received is sent out to the operation degenerating part 21g, Operation of the mobile phone device 10 concerned is degenerated compulsorily, and radio operation is made to control.

[0054]It is good also as composition of mobile phone device 10' and transmitter 40' as show drawing 5 the composition of the mobile phone device 10 and the transmitter 40 in drawing 4 here. A detecting signal [as opposed to / are a block lineblock diagram showing other examples of the composition of the cellular system which requires drawing 5 for this invention here, and / transmitter 40' from mobile phone device 10'], The case where it is considered as the radio wave signal with possible making the reply signal from transmitter 40' transmit and receive in the antenna 11 used when transmitting and receiving the general radio signal for a telephone call is shown.

[0055]**, the primary detecting element 30 which shows drawing 4 is built in radio treating part 28of mobile phone device 10' ', and a detecting signal is transmitted via the antenna 11, and, on the other hand, transmitter 40', This detecting signal is received in signal receive section 41', a conversion process is performed in signal conversion section 42', we suppose that it returns from signal transmission part 43' as a reply signal, and mobile phone device 10' decides to receive the reply signal returned via the antenna 11 further. Namely, the detecting-signal generation part 28a which generates the detecting signal for detecting transmitter 40' as mobile phone device 10', Build the input-signal discrimination section 28b for distinguishing the reply signal returned from transmitter 40' corresponding to said detecting signal in radio treating part 28of mobile phone device 10' ', and via the antenna 11, The signal transmitting and receiving processing about the detecting-signal transmission section which transmits said detecting signal, and the signal receive section which receives said reply signal is made to share with the transmitting and receiving processing of the general radio signal for a telephone call currently made between base stations in radio treating part 28'.

[0056]In the cellular system built over this invention like the above, When it is detected by the transmitter 40 and the reply signal from 40' that the transmitter 40 and those who possess 40' exist near the mobile phone device 10 and 10', It is possible to emit an alarm display to the

owner of the mobile phone device 10 concerned and 10' or the surrounding person, or to degenerate compulsorily operation of the mobile phone device 10 concerned and 10' automatically, and to control radio operation. Or it is possible to also make the transmitter 40 and 40' attach to a specific place or the specific equipment currently installed fixed, Even if it is a case where it not only uses only for a mobile like a person, but the mobile phone device 10 and 10' moved and exist a specific place or near [specific] the apparatus, It is also possible to emit an alarm display to the owner of the mobile phone device 10 concerned and 10' or the surrounding person, or to degenerate compulsorily operation of the mobile phone device 10 concerned and 10'.

[0057]The transmitter 40 and 40' can be constituted from passive molding equipment (namely, what is called a "tag") like the above-mentioned. It operates, only when the mobile phone device 10 and the detecting signal from 10' which exist in the neighborhood are received, it is possible to lessen influence on the person who possesses the transmitter 40 and 40', and it is not necessary to make a power supply able to build in, and can be used almost semipermanently.

[0058]Next, it explains still in detail about the example of the warning operation in the cellular system concerning this invention. In the cellular system built over this invention shown in drawing 4 here, When a cautious control signal is generated in the primary detecting element 30 like the above-mentioned by the storage parts store 24 in the mobile phone device 10, the caution output classification 24b which shows whether an alarm display is made to output using what kind of warning output means to the owner of the mobile phone device 10 concerned is registered beforehand. This caution output classification 24b can be set up make it output to 1 thru/or two or more warning output means like the above-mentioned. It is good also as using the warning output means beforehand registered into the mobile phone device 10 concerned as a default value as it is, or the owner of the mobile phone device 10 concerned is able to register arbitrary output classification at arbitrary stages.

[0059]The primary detecting element 30 of the mobile phone device 10 which **, for example, shows drawing 4 detects the reply signal from the transmitter 40 which exists in the neighborhood, When said cautious control signal has been transmitted from the input-signal discrimination section 34 to the caution output part 21f via the transmitting and receiving controller 21i, in the caution output part 21f, operation which reads the caution output classification 24b from the storage parts store 24 is performed.

[0060]As said warning operation classification 24a here, for example as warning information, If it is when it is registered that the speech information of the purport of warning generating should be notified from the loudspeaker 25a or the receiver 25b, speech information 24a₁ which notifies the purport of warning generating is also beforehand registered into the storage parts store 24 as the warning information 24a. Therefore, voice output part 21f₁ of the caution

output part 21f is started, and in this case, speech information 24a₁ as the warning information 24a beforehand registered into the storage parts store 24 is read from the storage parts store 24, and is transmitted to it to the sound-source generation part 25. In the sound-source generation part 25, speech information 24a₁ as transmitted warning information is changed into an audible signal, it outputs from the loudspeaker 25a thru/or the receiver 25b, and the owner of the mobile phone device 10 concerned and the surrounding person are notified. [0061]Next, the example of other warning operation in the cellular system concerning this invention is described. That is, it is a case where it is registered to the indicator 22 as said caution output classification 24b beforehand registered into the storage parts store 24 that an alarm display should be outputted. The picture information about the alarm display which should be displayed on the storage parts store 24 at the indicator 22 if it is in this case. (Namely, warning pattern information) The look-up table for determining character message data (namely, warning sentence character information) or a background color is also stored as picture information, text, and/or background color 24a₂.

[0062]The primary detecting element 30 of the mobile phone device 10 which **, for example, shows drawing 4 detects the reply signal from the transmitter 40 which exists in the neighborhood, When said cautious control signal has been transmitted from the input-signal discrimination section 34 to the caution output part 21f via the transmitting and receiving controller 21i, in the caution output part 21f, operation which reads said caution output classification 24b from the storage parts store 24 is performed.

[0063]If it is when it is registered into said caution output classification 24b here, for example that the display of the purport of warning generating should be outputted to the indicator 22 as warning information, Picture information, text, and/or background color 24a₂ which carries out an alarm display to the indicator 22 which display output part 21f₂ of the caution output part 21f is started, and is beforehand registered into the storage parts store 24, It is read from the storage parts store 24, and picture information (namely, warning pattern information) and character message data (namely, warning sentence character information) are transmitted and displayed to the indicator 22. Or for example, the background color of the indicator 22 is made to change into red from white according to the background color data of the look-up table beforehand registered into the storage parts store 24.

[0064]Next, the example of other warning operation is described also in the cellular system concerning this invention. That is, it is a case where it is registered that should blink the light-emitting part 22a which consists of LED for alarm displays, etc. as said caution output classification 24b beforehand registered into the storage parts store 24, or should make the luminescent color change, and an alarm display should be outputted. If it is in this case, the storage parts store 24 is made to blink the light-emitting part 22a, or blinking period and/or

luminescent color $24a_3$ which makes the luminescent color change is also beforehand registered as the warning information 24a.

[0065]The primary detecting element 30 of the mobile phone device 10 which **, for example, shows drawing 4 detects the reply signal from the transmitter 40 which exists in the neighborhood, When said cautious control signal has been transmitted from the input-signal discrimination section 34 to the caution output part 21f via the transmitting and receiving controller 21i, in the caution output part 21f, operation which reads said caution output classification 24b from the storage parts store 24 is performed.

[0066]As said caution output classification 24b here, for example as warning information, If it is when it is registered that the purport of warning generating should be displayed with blink and the luminescent color of the light-emitting parts 22a, such as LED currently allocated by the case of the mobile phone device 10, Warning information 24a, i.e., blinking period, and/or luminescent color $22a_3$ which carries out an alarm display to the light-emitting part 22a which radiant power output part $21f_3$ of the caution output part 21f is started, and is beforehand registered into the storage parts store 24, It is read from the storage parts store 24, and the light-emitting part 22a is blinked, or the color of the light-emitting part 22a is changed from green to red, for example.

[0067]Next, the example of other warning operation is described also in the cellular system concerning this invention. That is, it is a case where it is registered that should vibrate the vibrator 27 for alarm displays and an alarm display should be outputted as said caution output classification 24b beforehand registered into the storage parts store 24. If it is in this case, vibration pattern $24a_4$ which vibrates the vibrator 27 is also beforehand registered into the storage parts store 24 as the warning information 24a.

[0068]The primary detecting element 30 of the mobile phone device 10 which **, for example, shows drawing 4 detects the reply signal from the transmitter 40 which exists in the neighborhood, When said cautious control signal has been transmitted from the input-signal discrimination section 34 to the caution output part 21f via the transmitting and receiving controller 21i, in the caution output part 21f, operation which reads said caution output classification 24b from the storage parts store 24 is performed via the control section 21.

[0069]If it is when it is registered that the purport of warning generating should be outputted to said caution output classification 24b by vibrating the vibrator 27, for example as warning information here, Warning information 24a, i.e., vibration pattern $24a_4$ which carries out an alarm display to the vibrator 27 which vibration output part $21f_4$ of the caution output part 24f is started, and is beforehand registered into the storage parts store 24, It is read from the storage parts store 24, and the vibrator 27 is vibrated according to this vibration pattern $24a_4$.

[0070]About the warning operation in the cellular system concerning this invention mentioned above. Can operate independently, respectively and in the caution output classification 24b of the storage parts store 24. It is also possible to register so that two or more warning output means may be operated simultaneously, For example, at the same time it makes vocal alarm information output from the loudspeaker 25a or the receiver 25b display the picture information for alarm displays on the indicator 22, or, Or using it as a warning means which combined two or more arbitrary caution output operations can also indicate the light-emitting part 22a by blink at the same time it vibrates the vibrator 27.

[0071]Next, the example of different warning operation also in the cellular system concerning this invention is described. Because it reported automatically that alarm condition had occurred to the owner of the mobile phone device 10 concerned, or the surrounding person in the example of each above-mentioned warning operation, had stopped, but. In this example, do not stop generating of alarm condition only at notifying, but further, radio operation of the mobile phone device 10 which transmits and receives a radio wave signal between base stations -- compulsory -- it is going to control -- being a thing and degenerating operation of the mobile phone device 10 concerned -- specific radio operation -- it is going to control -- it is a thing.

[0072]When putting in another way and the input-signal discrimination section 34 of the mobile phone device 10 detects the reply signal from the transmitter 40 in drawing 4, The cautious control signal generated in the input-signal discrimination section 34 is notified to the caution output part 21f of the control section 21, It is not only used as a warning means which shows the purport of alarm condition generating over the sound-source generation part 25, the indicator 22, the light-emitting part 22a, or the vibrator 27, but, It is notified also to the operation degenerating part 21g of the control section 21, operation of the mobile phone device 10 is degenerated, and it is used as a control signal which also controls radio operation.

[0073]If it is in this case, the power supply of the mobile phone device 10 is controlled as a control pattern of radio operation, for example, Make power supplies other than the power supply needed in a waiting state set it as OFF compulsorily, or the radio treating part 28 is controlled, radio wave output intensity is reduced rather than the time of normal operation -- making (for example, you make it halved). Or the power supplying part of the circuit part needed for telephone calls, such as the radio treating part 28 and the voice conversion section 29, is controlled, and degeneration operation which makes the radio operation from the mobile phone device 10 concerned control is compulsorily performed by either of setting it as OFF compulsorily etc. The degenerate mode 24c of operation which specifies any of this degeneration operation are made to carry out is beforehand registered into the storage parts store 24.

[0074]What is beforehand registered into the mobile phone device 10 concerned as a default value may be used for this degenerate mode 24c of operation as it is, and, Or the owner of the mobile phone device 10 concerned is able to register arbitrary degenerate modes of operation at arbitrary stages using the degenerate mode registering part 21c of operation.

[0075]When the primary detecting element 30 of the mobile phone device 10 which **, for example, shows drawing 4 detects the reply signal from the transmitter 40 which exists in the neighborhood, From the input-signal discrimination section 34, said cautious control signal is transmitted to the caution output part 21f and the operation degenerating part 21g via the transmitting and receiving controller 21i, respectively. In the caution output part 21f which received this cautious control signal, Like the above-mentioned, read the caution output classification 24b from the storage parts store 24, and, corresponding to said caution output classification 24b as warning information, When outputting in speech information is specified, speech information 24a₁ which shows the purport of warning generating is changed into an audible signal by the sound-source generation part 25, and is made to output from the loudspeaker 25a or the receiver 25b.

[0076]In the operation degenerating part 21g which, on the other hand, received said cautious control signal, The degenerate mode 24c of operation beforehand registered into the storage parts store 24 is read from the storage parts store 24 that operation of the mobile phone device 10 concerned should be degenerated, and radio operation should be controlled compulsorily, Operation of the mobile phone device 10 concerned is degenerated compulsorily, and radio operation is made to restrict based on this degenerate mode 24c of operation by controlling the power supply of the mobile phone device 10 concerned, and the current supply of radio wave output intensity or the radio treating part 28, and the voice conversion section 29.

[0077]Next, it explains still in detail about the example of the warning operation in the cellular system concerning this invention mentioned above. That is, it does not stop only at notifying generating of alarm condition, but suppose that the operation which also degenerates compulsorily further radio operation of the mobile phone device 10 which transmits and receives a radio wave signal between base stations is shown still in detail using drawing 4, drawing 6, and drawing 7.

[0078]Here, it shows the example of composition of the cellular system concerning this invention to it, and as drawing 4 mentioned above here drawing 6, It is one display example of the indicator 22 the owner of the mobile phone device 10 concerned indicates the selection picture for choosing degenerate mode (namely, control item for controlling radio operation) of operation to be as degenerate mode of operation which degenerates radio operation of the mobile phone device 10. When drawing 7 detects the reply signal from the transmitter 40 which exists in the neighborhood, it is a flow chart for explaining an example of the operation in the degenerate mode of operation which sets the power supply of the mobile phone device 10

as OFF compulsorily.

[0079]Based on the directions from the owner of the mobile phone device 10, beforehand to the indicator 22. By displaying the selection picture of the control item (degenerate mode of operation) for performing control (namely, setting out of degenerate mode of operation) about radio operation of the mobile phone device 10 concerned, The owner of the mobile phone device 10 concerned can choose whether which control item (degenerate mode of operation) restricts radio operation using the final controlling element 23.

[0080]Namely, in the example shown in drawing 6, as a control item (degenerate mode of operation) which the owner of the mobile phone device 10 concerned can choose, "1. power OFF control" which sets compulsorily the power supply of the mobile phone device 10 concerned as OFF, "2. the radio wave output intensity control" which controls the radio treating part 28 and reduces radio wave output intensity rather than the time of normal operation, Or the example as which three control items (degenerate mode of operation) of "3. the telephone call inhibit control" which controls the power supplying part of the circuit part needed for telephone calls, such as the radio treating part 28 and the voice conversion section 29, and is compulsorily set as OFF are displayed is shown. In this example, although these three control items (degenerate mode of operation) are shown, In the cellular system concerning this invention, in this case, it is not limited, and you may add or change as a control item which degenerates operation of the mobile phone device 10.

[0081]Here, the control item (degenerate mode of operation) with the selected owner of the mobile phone device 10 concerned is recorded and registered into the degenerate mode 24c of the storage parts store 24 of the mobile phone device 10 of operation. Below, as an underline shows in drawing 6, below "1. power OFF control" is chosen by the owner of the mobile phone device 10 concerned, and the case where record registration is carried out is explained to the degenerate mode 24c of operation. Namely, by turning OFF the power supply of the mobile phone device 10 concerned, when the reply signal from the transmitter 40 which exists near the mobile phone device 10 concerned is detected as a control item (degenerate mode of operation), The operation in the case of deterring compulsorily generation of the radio wave signal from the antenna 11 is taken for an example, and it explains based on the flow chart shown in drawing 7 using the block lineblock diagram of drawing 4.

[0082]First, the mobile phone device 10 transmits the detecting signal of the transmitter 40 from the signal transmission part 32 (Step S1). The reply signal returned from the transmitter 40 which received this detecting signal is received in the signal receive section 33 (Step S2), and it is distinguished in the input-signal discrimination section 34 whether it is a reply signal corresponding to the transmitted detecting signal (Step S3). In Step S3, when it is distinguished that it is a reply signal corresponding to the transmitted detecting signal, via (YES of Step S3), and the transmitting and receiving controller 21i, the operation degenerating

part 21g is started and read-out of the degenerate mode 24c of operation beforehand registered into the storage parts store 24 is performed.

[0083]When the operation which makes the power supply of the mobile phone device 10 concerned set it as OFF compulsorily is chosen and registered into the degenerate mode 24c of operation like the above-mentioned, 21 h of internal timers provided in the mobile phone device 10 are started first (step S4). In order that these 21 h of internal timers may return the power supply of the mobile phone device 10 concerned to an ON state from an OFF state, it is a timer for calculating the time limit set beforehand, and when said time limit set beforehand passes, 21 h of internal timers show the example which becomes a value of "0." Said time limit calculated by 21 h of internal timers, May decide to use the value beforehand registered into the mobile phone device 10 concerned as a default value at the internal timer time limit 24e of the storage parts store 24 as it is, and, Or the owner of the mobile phone device 10 concerned is able to register any value at the internal timer time limit 24e at arbitrary stages using the internal timer time limit registering part 21e.

[0084]Subsequently, the power supply of the mobile phone device 10 concerned is promptly set as OFF (it awaits at the time of standby, only operation of a state is validated, and all the power supplies concerning other operations are turned off) compulsorily (Step S5). It ** and the power supply needed for minimum operation of the mobile phone device 10 is compulsorily set as the state where the electric wave which has on the medical equipment currently united with the transmitter 40, control machinery, etc., for example is not emitted as with one even if it does not set all power supplies as OFF.

[0085]After setting the power supply of the mobile phone device 10 as OFF, time progress of 21 h of internal timers is supervised (Step S6), When 21 h of internal timers reach "0" (YES of Step S6), a power supply is judged to be that in which the time limit compulsorily set as OFF timed out, and the power supply of the mobile phone device 10 is returned to one (Step S7), and it returns to Step S1 and is made to once return to the send action of a detecting signal. When the transmitter 40 still exists in the neighborhood and a reply signal is detected again, step S4 thru/or the same operation as S7 wind, and it is *****.

[0086]On the other hand, when the transmitter 40 is in the state where it does not exist in the neighborhood, In Step S3, it will be in the state where a reply signal is not detected (NO of Step S3), and in order that the state where the transmitter 40 exists in the neighborhood may supervise henceforth whether it appears again, the send action of the detecting signal of Steps S1 thru/or S3 is repeated.

[0087]Next, the example of different warning operation also in the cellular system concerning this invention is described. That is, in this example, operation in case the transmitter side is provided with the information storage part is shown using drawing 8 and drawing 9. It is a flow chart for drawing 8 to be a block lineblock diagram showing an example of the composition of

the transmitter in the case of having the information storage part in a transmitter, and for drawing 9 explain an example of the radio operation in the degenerate mode of the mobile phone device 10 at the time of using a transmitter provided with the information storage part of operation here.

[0088]The signal receive section 51 which receives a read signal for the transmitter 50 shown in drawing 8 to read information, including the degeneration directions mode 53a of operation etc. which are memorized from the mobile phone device 10 to a detecting signal or the information storage part 53, The information storage part 53 which memorizes information, including the degeneration directions mode 53a of operation etc., It has the signal transmission part 54 which transmits the information memorized by the reply signal over a detecting signal, and the information storage part 53, and the control section 52 which controls operation of the transmitter 50 whole, and a noncontact IC tag etc. are considered as an example.

[0089]The degeneration directions mode 53a of operation memorized by the information storage part 53 here, It is the information which consists of the same composition as the degenerate mode 24c of operation which performs the directions for degenerating operation of the mobile phone device 10 and making radio operation control, and is memorized by the storage parts store 24 of the mobile phone device 10. That is, let actively radio operation of this mobile phone device 10 be a control plug from the transmitter 50 side to the mobile phone device 10 in the neighborhood where the transmitter 50 concerned exists.

[0090]The input-signal discrimination section 34 of the primary detecting element 30 of the mobile phone device 10 which shows drawing 4 that this transmitter 50 exists in the neighborhood, The read signal for reading the degeneration directions mode 53a of the information storage part 53 with which the transmitter 50 was equipped of operation, when it distinguishes with the reply signal from the transmitter 50, It is transmitted from the signal transmission part 32, the degeneration directions mode 53a of the information storage part 53 of the transmitter 50 of operation is read via the control section 52 of the transmitter 50 according to this read signal, and the mobile phone device 10 is returned from the signal transmission part 54.

[0091]In the mobile phone device 10, operation like the flow chart shown in drawing 9 will be performed based on the control item (degenerate mode of operation) registered into the degeneration directions mode 53a of the information storage part 53 of the returned transmitter 50 of operation.

[0092]The degeneration directions mode 53a of operation memorized by the information storage part 53 of the transmitter 50 in this example, After return of a reply signal, although it is read from the information storage part 53 and the example in the case of being transmitted to the mobile phone device 10 is shown based on the read signal transmitted from the mobile phone device 10, in this case, the cellular system concerning this invention is not restricted.

Namely, in the transmitter 50, the degeneration directions mode 53a of operation is automatically read from the information storage part 53 after return of a reply signal, it is good also as a thing good also as being transmitted to the mobile phone device 10 for which it carries out, or it includes in the reply signal itself as a reply signal namely,, and this degeneration directions mode 53a of operation is transmitted.

[0093]The degeneration directions mode 53a of operation memorized by the information storage part 53 of the transmitter 50 is read first, and it is made to transmit to the mobile phone device 10 in the flow chart of drawing 9 (Step S11). It is distinguished by the operation degenerating part 21g of the mobile phone device 10 whether the control item (degenerate mode of operation) indicating degenerating operation of the mobile phone device 10 concerned, and controlling radio operation is registered into the transmitted degeneration directions mode 53a of operation (Step S12). Operation of the mobile phone device 10 concerned is degenerated in the degeneration directions mode 53a of operation, When the control item (degenerate mode of operation) which directs to control radio operation is not set up (NO of Step S13), Operation of the mobile phone device 10 concerned is degenerated, and the operation degenerating part 21g of the mobile phone device 10 concerned is ended as a case where operation which controls radio operation is unnecessary, without controlling in any way (Step S18).

[0094]Operation of the mobile phone device 10 concerned is degenerated in the degeneration directions mode 53a of operation, When the control item (degenerate mode of operation) which directs to control radio operation is set up (YES of Step S13), This control item (degenerate mode of operation) degenerates operation of the mobile phone device 10 concerned, When it is checked whether the directions which control radio operation are made correctly and it is distinguished from the not right thing (in the case of "a distinction error" of Step S14), the operation degenerating part 21g of the mobile phone device 10 concerned is ended without controlling in any way (Step S18).

[0095]Degenerating operation of the mobile phone device 10 concerned to the degeneration indicative data 53a of operation, and controlling radio operation as a control item (degenerate mode of operation) to direct, When it is set up that the power supply of the mobile phone device 10 concerned should be compulsorily set as OFF (when it is "power control" of Step S14), The completely same operation as the case of the flow chart shown in above-mentioned drawing 7 is performed, and control-power-supply 21g₁ of the mobile phone device 10 concerned shown in drawing 4 sets a power supply as OFF compulsorily until the time limit set beforehand passes (Step S15).

[0096]Degenerating operation of the mobile phone device 10 concerned to the degeneration indicative data 53a of operation, and controlling radio operation as a control item (degenerate mode of operation) to direct, When the radio wave output intensity of the radio wave signal of

the mobile phone device 10 concerned was controlled and it is set up that should be decreased (when it is the "radio wave output intensity control" of Step S14), Radio wave output intensity control part 21g₂ of the mobile phone device 10 concerned shown in drawing 4, The radio wave output intensity of the radio wave signal which transmits the control signal which controls radio wave output intensity to the radio treating part 28, and is outputted outside, for example to horsepower output intensity 1/2 or about 1/3. It is made to decrease and set it as the radio wave output intensity specified by 24 d of reduction radio field intensity memorized by the radio wave output intensity specified from the transmitter 50 side, or the storage parts store 24 of the mobile phone device 10 concerned (Step S16).

[0097]Setting out of radio wave output intensity can also be separately registered beforehand with 24 d of reduction radio field intensity of the storage parts store 24 by the owner of the mobile phone device 10 concerned like the above-mentioned using the reduction radio-field-intensity registering part 21d of the mobile phone device 10 concerned. Control of radio wave output intensity is set as the degeneration directions mode 53a of operation at the information storage part 53 of the transmitter 50, And if it is when both the information that shows the radio wave output intensity which should be reduced is memorized, it is able to read the radio wave output intensity memorized by this information storage part 53 with the degeneration directions mode 53a of operation, and to reduce the radio wave output intensity of the mobile phone device 10 concerned.

[0098]As the degeneration directions mode 53a of the information storage part 53 by the side of the transmitter 50 of operation, If it is when only setting out which directs control of radio wave output intensity is memorized and the information which shows the radio wave output intensity which should be reduced is not memorized, Based on the value (value which the owner of the default value or the mobile phone device 10 concerned registered) memorized by 24 d of reduction radio field intensity of the mobile phone device 10 concerned, operation which 1/2 or 1/3 of horsepower output intensity is made to reduce output intensity, and is set as it is performed.

[0099]Degenerating operation of the mobile phone device 10 concerned to the degeneration indicative data 53a of operation, and controlling radio operation as a control item (degenerate mode of operation) to direct, The radio treating part 28 and the voice conversion section 29 of the mobile phone device 10 concerned are controlled, When the directions which should stop supply of the power supply needed for a telephone call are set up (when it is "call control" of Step S14), Call control part 21g₃ of the mobile phone device 10 concerned shown in drawing 4, Transmit the control signal for stopping the current supply for a telephone call to the radio treating part 28 and the voice conversion section 29, supply of the power supply for a telephone call of the radio treating part 28 and the voice conversion section 29 is made to suspend, and telephone call operation is made to deter (Step S17).

[0100]Next, the example of different warning operation also in the cellular system concerning this invention is described. That is, in this example, an example in case the transmitter is provided with the active device which can react to the radio wave signal of a specific frequency band among the radio wave signals from the outside is shown. That is, if it is in this active device, the frequency band of the radio wave signal received from the outside is limited in many cases. Therefore, in order to send in response to each signal of two or more received frequency bands, it is necessary to constitute the transmitter which has two or more active devices.

[0101]If it is in the case of a transmitter which receives the detecting signal from several mobile phone devices 10 with which frequency bands differ mutually as a detecting signal which ** and is transmitted from the mobile phone device 10, The transmitter which allocates two or more active devices which react according to the frequency band of the detecting signal from each mobile phone device 10 will be constituted. For example, if it is when the radio wave signal of both the mobile phone device which uses 800 MHz bands, and the mobile phone device which uses 1.5 GHz bands is used as each detecting signal, The transmitter provided with two active devices which have a reception means which receives the detecting signal of each frequency band, and a transmitting means which can transmit the reply signal of each frequency band generated based on the detecting signal of each received frequency band will be constituted. Since this active device is [constituting small] also possible, even if it is a case where it is used not only in two pieces but more than one, the size of the transmitter itself does not become large.

[0102]The example of different warning operation also in the cellular system concerning this invention is described. In [since the transmitter is constituted small and lightweight also in which example and operation power is also unnecessary at the time mentioned above] this example, For example, it becomes possible to prevent un-equipping and a carrying failure of a transmitter by making a transmitter and the medical equipment to cut unify not only about the various medical equipment currently installed in the hospital but about the small medical equipment which a person carries like a pacemaker.

[0103]

[Effect of the Invention]According to the cellular system concerning this invention explained above, the operation effect like the following can be obtained. Namely, even if it is except the specific place that medical equipment is installed and use of the mobile phone device is restricted like the hospital etc., If only it possesses the transmitter, at arbitrary places, the mobile phone device itself located near the possessor of this transmitter, such as a portable telephone and a PHS telephone set When it is possible to detect this transmitter that exists in the neighborhood and this situation occurs, Operation of the mobile phone device concerned is compulsorily degenerated so that the influence on the circumference may not arise, Control

the power supply of the mobile phone device concerned at OFF, control to reduce radio wave output intensity, or, Or while becoming possible to regulate radio operation and to prevent generating of an electromagnetic interference by controlling the current supply of the circuit part used for a telephone call, it is possible to emit an alarm display automatically to the owner of the mobile phone device concerned or the surrounding person.

[0104]The transmitter applied to this cellular system, Even if it is possible not only a mobile like a person but to make it attach to a certain specific place or specific apparatus and it is a case where a mobile phone device moves this specific place and near the specific apparatus, and it comes to exist, Like the above-mentioned case, operation of the mobile phone device concerned is degenerated and it becomes possible to regulate radio operation or to give the owner of the mobile phone device concerned, and the surrounding person an alarm display.

[0105]By using as passive molding equipment (namely, what is called a "tag") the transmitter applied to this cellular system, It will operate, only when the detecting signal from the mobile phone device which exists in the neighborhood is received, and the influence on the person who possesses a transmitter can decrease, and it is not necessary to make a power supply able to build in, and can be used semipermanently.

[0106]The integral type which makes a transmitter build in the medical equipment itself can also be constituted, and un-equipping, a carrying failure, etc. of a transmitter can be prevented.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is an approximate account figure for explaining operation of the cellular system concerning this invention.

[Drawing 2]It is a block lineblock diagram showing an example of the composition of the transmitter used for the portable telephone system concerning this invention.

[Drawing 3]It is a block lineblock diagram showing other examples of the composition of the transmitter used for the portable telephone system concerning this invention.

[Drawing 4]It is a block lineblock diagram showing an example of the composition of the cellular system concerning this invention.

[Drawing 5]It is a block lineblock diagram showing other examples of the composition of the cellular system concerning this invention.

[Drawing 6]It is one display example of the indicator the owner of the mobile phone device concerned indicates the selection picture for choosing degenerate mode (control item) of operation to be as degenerate mode of operation which degenerates radio operation of a mobile phone device.

[Drawing 7]When the reply signal from the transmitter which exists in the neighborhood is detected, it is a flow chart for explaining an example of the operation in the degenerate mode of operation which sets the power supply of a mobile phone device as OFF compulsorily.

[Drawing 8]It is a block lineblock diagram showing an example of the composition of the transmitter in the case of having the information storage part in a transmitter.

[Drawing 9]It is a flow chart for explaining an example of the radio operation in the degenerate mode of the mobile phone device at the time of using a transmitter provided with the information storage part of operation.

[Description of Notations]

1 [-- Response radio wave signal,] -- A mobile phone device, 2 -- A transmitter, 3 -- A detection radio wave signal, 4 10 10' [-- Control section,] -- A mobile phone device, 11 -- An

antenna, 20 -- A telephone section, 21 21a -- A warning information registering part, 21b -- A caution output classification registering part, 21c -- Degenerate mode registering part of operation, 21d -- A reduction radio-field-intensity registering part, 21e -- An internal timer time limit registering part, 21f -- Caution output part, 21f₁ -- A voice output part, 21f₂ -- A display output part, 21f₃ -- Radiant power output part, 21f₄ -- A vibration output part, 21g -- An operation degenerating part, 21g₁ -- Control power supply, 21g₂ -- A radio wave output intensity control part, 21g₃ -- A call control part, 21h -- Internal timer, 21i [-- Final controlling element,] -- A transmitting and receiving controller, 22 -- An indicator, 22a -- A light-emitting part, 23 24 [-- Picture information, text, and/or a background color,] -- A storage parts store, 24a -- Warning information, 24a₁ -- Speech information, 24a₂ 24a₃ -- A blinking period and/or the luminescent color, 24a₄ -- Vibration pattern, 24b [-- The internal timer time limit, 25 / -- A sound-source generation part, 25a / -- A loudspeaker, 25b / -- A receiver, 26 / -- A microphone, 27 / -- Vibrator, 28, 28' / -- Radio treating part,] -- Caution output classification, 24c -- Degenerate mode of operation, 24d -- Reduction radio field intensity, 24e 28a, 31 -- A detecting-signal generation part, 28b, 34 -- An input-signal discrimination section, 29 -- Voice conversion section, 30 [-- Transmitter,] -- A primary detecting element, 32 -- A signal transmission part, 33 -- A signal receive section, 40, 40' 41 41' [-- A transmitter, 51 / -- A signal receive section, 52 / -- A control section, 53 / -- An information storage part, 53a / -- Degeneration directions mode of operation, 54 / -- Signal transmission part.] -- A signal receive section, 42, 42' -- A signal conversion section, 43, 43' -- A signal transmission part, 50

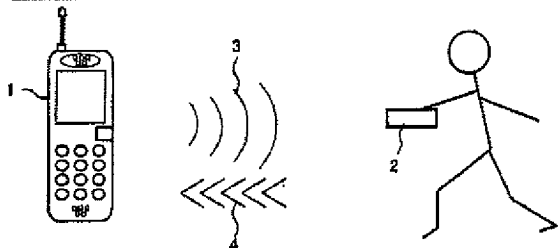
* NOTICES *

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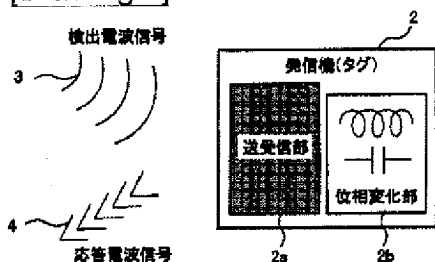
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DRAWINGS

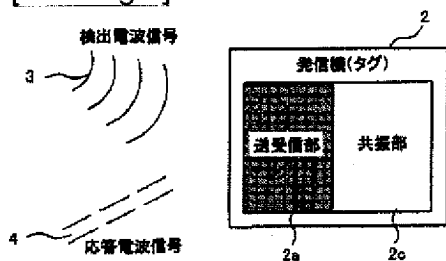
[Drawing 1]



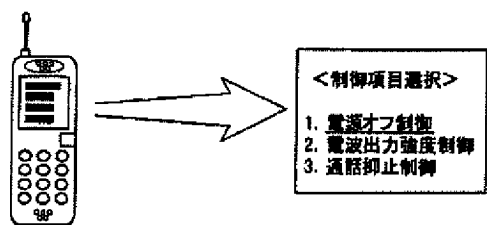
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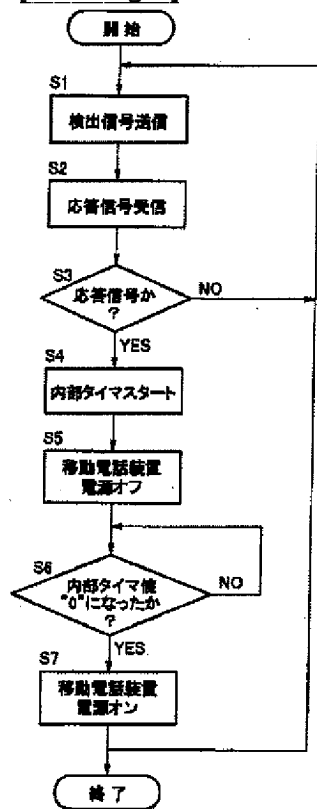
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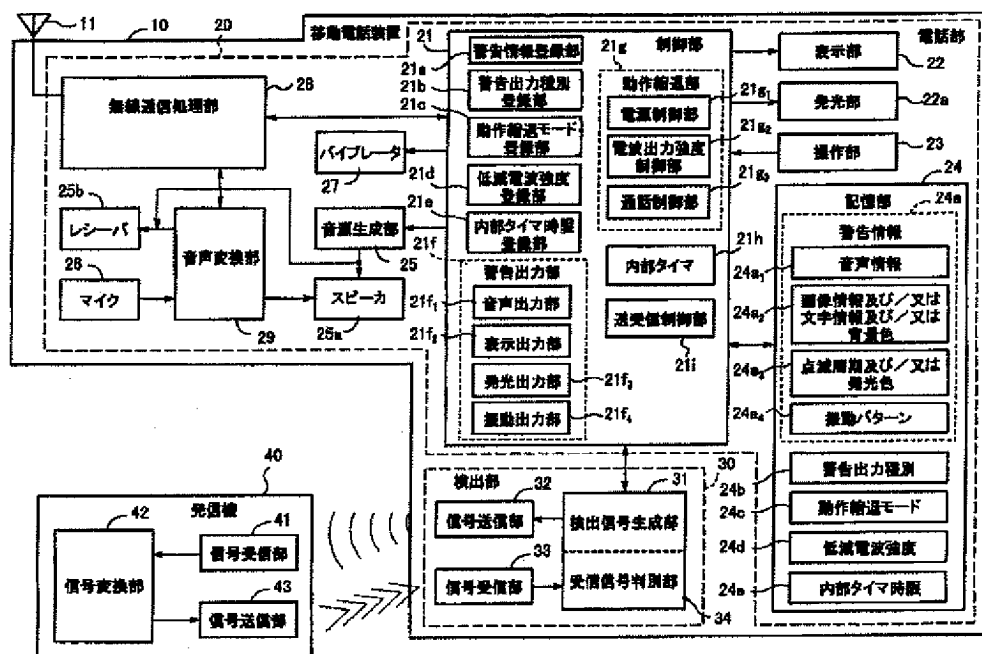
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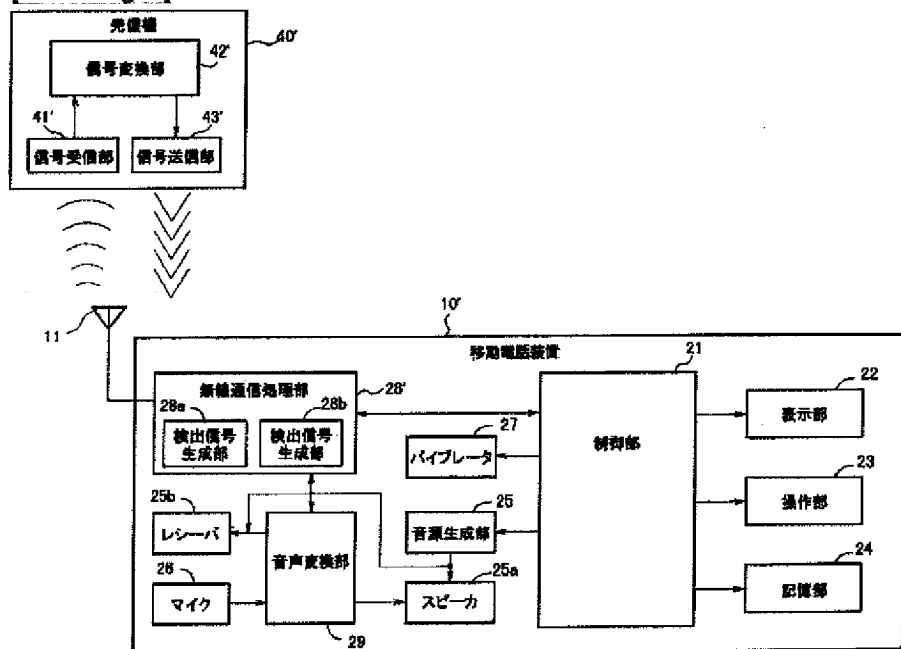
[Drawing 7]



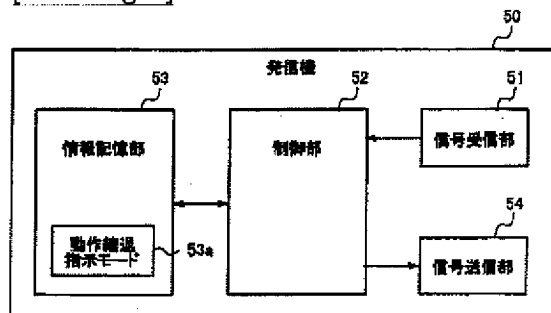
[Drawing 4]



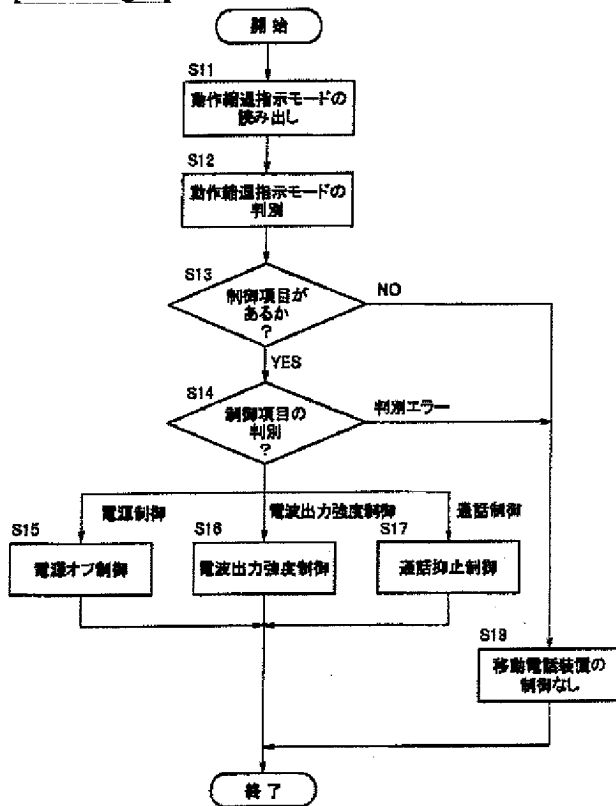
[Drawing 5]



[Drawing 8]



[Drawing 9]



[Translation done.]